Concanavalin A Conjugates

Table 1. Contents and storage information.

Product	Amount	Storage	Stability
Texas Red®, fluorescein, and tetramethylrhodamine conjugates of concanavalin A	10 mg, lyophilized	• ≤–20ºC • Desiccate • Protect from air	When stored as directed, products are stable for at least 1 year.
Oregon Green®, Marina Blue®, and Alexa Fluor® conjugates of concanavalin A	5 mg, lyophilized		
Alexa Fluor® conjugate of succinylated concanavalin A			
Approximate fluorescence excitation/emission maxima: See Table 2			

Introduction

Lectins are versatile probes for detecting glycoconjugates in histochemical and flow cytometric applications and for localizing glycoproteins in gels. Concanavalin A selectively binds to α-mannopyranosyl and α-glucopyranosyl residues. In neutral and alkaline solutions, concanavalin A exists as a tetramer with a molecular weight of approximately 104,000 daltons. In acidic solutions (pH below 5.0), concanavalin A exists as a dimer.

When concanavalin A is succinylated with succinic anhydride, it is irreversibly converted to a dimer that retains the same sugar-binding specificity as the parent lectin. However, succinyl-concanavalin A has a profile of biological activities different from the tetrameric form. In contrast to the tetramer, succinyl-concanavalin A does not induce capping of cell surface glycoprotein receptors, inhibit capping of cell surface immunoglobulin receptors, or strongly agglutinate erythrocytes or spleen cells. The mitogenic effect of succinyl-concanavalin A is similar to that of the native lectin, although it is mitogenic over a significantly wider range of concentrations than the tetramer.[1,2]

Invitrogen offers a broad selection of concanavalin A conjugates. Table 2 provides a summary of these products, including their peak excitation and emission wavelengths (where applicable).

Table 2. Fluorescent concanavalin A conjugates and their spectral characteristics.

Cat #	Label	Ex *	Em *
C11254	Alexa Fluor® 350	346	442
C827	Fluorescein	494	518
C11252, C21401 †	Alexa Fluor® 488	495	519
C6741	Oregon Green® 488	496	524
C860	Tetramethylrhodamine	555	580
C11253	Alexa Fluor® 594	590	617
C825	Texas Red®	595	615
C21402	Alexa Fluor® 633	632	647
C21421	Alexa Fluor® 647	650	668

***** Approximate fluorescence excitation (Ex) and emission (Em) maxima, in nm. Complete spectra for these dyes are available at our website (probes.invitrogen.com). **†** The concanavalin A of this conjugate is succinylated.

Before You Begin

Preparing the Stock Solutions

Stock solutions can be made at 1–5 mg/ml in 0.1 M sodium bicarbonate (approximate pH 8.3). In most cases a small percentage of the conjugate will remain as a visible aggregate in solution. Store solutions at 2–6°C with the addition of 2 mM sodium azide; for longer storage, divide the solution into aliquots and freeze at ≤–20°C. PROTECT FROM LIGHT, AVOID REPEATED FREEZING AND THAWING.

Guideline for Use

It is a good practice to centrifuge the protein conjugate solution briefly in a microcentrifuge before use; only the supernatant should then be added to the experiment. This step will eliminate any protein aggregates that may have formed during storage, thereby reducing nonspecific background staining.

Because staining protocols vary with application, the appropriate dilution of concanavalin A conjugate should be determined empirically. Typically, a final concentration of 50–200 µg/mL is satisfactory for immunohistochemical applications.

References

1. Biochemistry 32, 5116 (1993); **2.** Proc Nat Acad Sci USA 70, 1012 (1973).

Product List **Current prices may be obtained from our website or from our Customer Service Department.**

Cat #	Product Name	Unit Size
C11254	concanavalin A, Alexa Fluor® 350 conjugate	5 mg
C11252	concanavalin A, Alexa Fluor® 488 conjugate	5 mg
C21401	concanavalin A, succinylated, Alexa Fluor® 488 conjugate	5 mg
C11253	concanavalin A, Alexa Fluor® 594 conjugate	5 mg
C21402	concanavalin A, Alexa Fluor® 633 conjugate	5 mg
C21421	concanavalin A, Alexa Fluor® 647 conjugate	5 mg
C827	concanavalin A, fluorescein conjugate	10 mg
C6741	concanavalin A, Oregon Green® 488 conjugate	5 mg
C860	concanavalin A, tetramethylrhodamine conjugate	10 mg
C825	concanavalin A, Texas Red® conjugate	10 mg

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